


Soup To Nuts!



"SOUP TO NUTS"

**The Role of Construction
in Project Delivery**

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AGENDA

- Project Lettings
- What is Project Delivery?
- The Pressure Builds
- "Day of Reckoning"
- What Do We learn?
- Where Do We Go From Here?

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Soup To Nuts?

Legend

Roman 3 Day Feasts 


First Course 

Last Course 

The Beginning to the End...

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Who Is NCDOT?

The Complexities of What We Do are Enormous!

- Solid
- Competent
- Professional
- High Integrity
- Proud
- Resilient
- Progressive (Cautiously!)
- Etc., Etc., Etc...

Planning


Design

Construction

Operations

We Do a Tremendous Number of Things Extremely Well...

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Who Is NCDOT?

Challenges

- Finishing Projects On Time
- Project Costs
- Quality
- Workforce
 - Compensation
 - Retention
 - Training
- Public Image
- Life-Cycle/Longevity/Maintainability
- Priorities

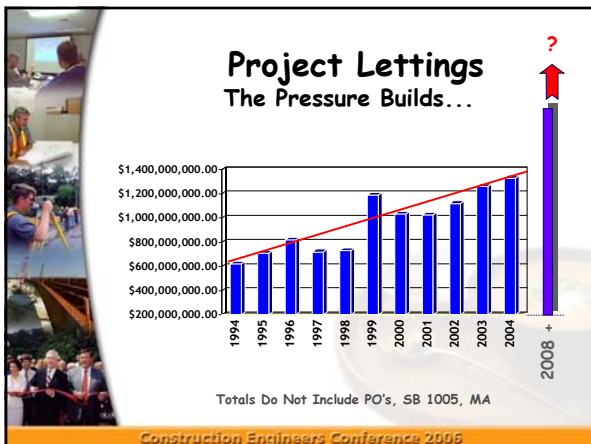
Planning

Design

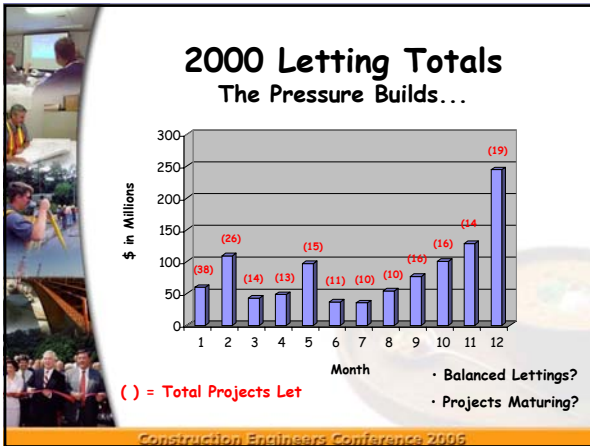
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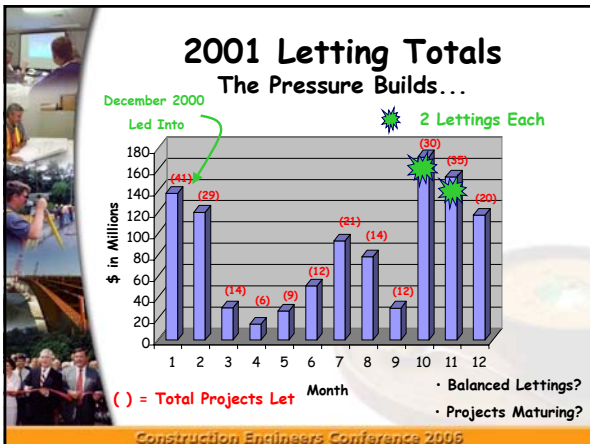
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"Old" Definition of Project Delivery

If We Can Get a Project to the Letting We Will be Successful

- Immense Pressure to Award Contracts Within a Given Timeline "No Matter What"
- Preconstruction Schedule Delays are Unacceptable
- Do "Whatever it Takes" to Get the Project to Letting

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Where Was This Leading Us?


- I-40 West of Greensboro
- I-85 in Durham
- Guess Road in Durham

We Talked About the Problems,
the "What ifs", the Pressure...





"The Day of Reckoning"

I-40 in Durham/Orange Counties


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I-40 Durham/Orange Co.


- "Stop" Condition 
- Undercut 
- Drainage 
- Bonded Overlay 

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I-40 Durham/Orange Co.


- Behind Schedule
- Public Pressure
- Accidents
- Questions...
- Media-Who Is To Blame?



October 13, 2005
The New Freeway
Needs Fixes


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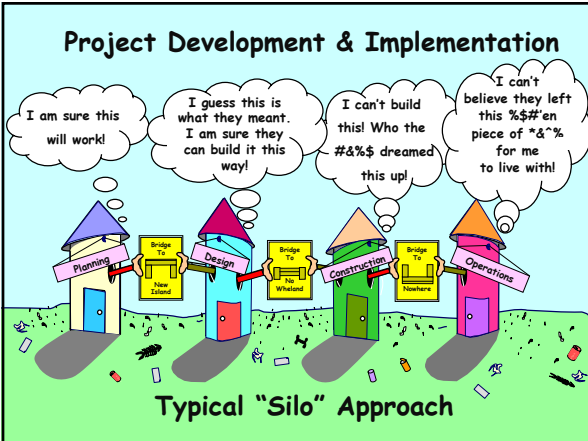
What Do We learn From This?

- Definition of Project Delivery
- Project Scoping Process
- Pressure to Let Projects
- Unbalanced Lettings
- Workload
- Communication
 - Internal
 - External
- Checks & Balances




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Project Development & Implementation



Typical "Silo" Approach



The Answers


"New" Definition of Project Delivery

*If We Can Get a Project Open to the Public
We Will be Successful*

- A Delayed Letting Does Not Necessarily Mean Delayed Completion
- Delays During Construction are Unacceptable
- Do "Whatever it Takes" During Preconstruction to Ensure We Have Focused on Completion *and Beyond*

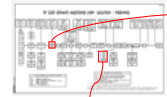
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The Answers

Project Scoping



Final Scoping Meeting

Scope Refinement - Ensures That Scope is Identified Just Prior to Development of R/W Plans

Enhancements

- After 4A
- Goals
- Major Project Decisions Made
- "Close the Door" on Additions

Planning Scoping Meeting

NEPA Begins, Define or Refine Project Details, Alternatives Better Defined, Schedules Developed Using PMIS


Enhancements

Begin Alternative Contracting Discussions

- Accelerated Construction?
- Design-Build?
- Joint Venture/Disincentive?
- Other?

- Value Engineering
- Constructability
- New Processes
- Inclusion...

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The Answers

Pressure to Let Projects, Unbalanced Lettings


- High Level Understanding
- Reality

Our Funding Issues Have "Solved"

This - Is This Temporary?

Saying "We Simply Cannot Do It" is Not an Answer... Lyndo Tippet, Secretary of Transportation

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The Answers

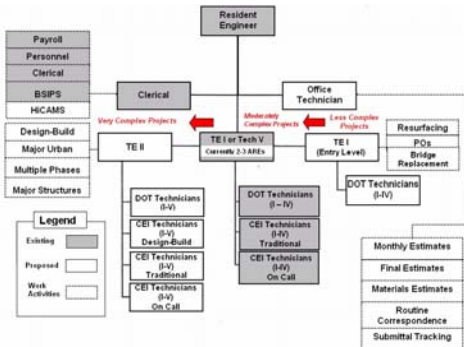
Handling the Workload

- Preconstruction, Construction, & Operations
- Refocus Roles & Responsibilities
 - Internally
 - Externally
 - PEFs
 - Contractors
- Workforce - What Keeps us Strong?
- Organizational Rebalancing?
- Organizational Structure?

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The RE Office of The Future?



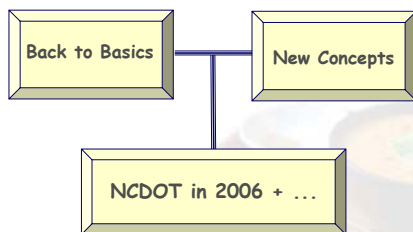
The Answers

Communication Issues

- Cradle to Grave Project Management
 - Cross-sectional Teams
 - Individual Project Managers
- Project Scoping & Development Process
- Sharing of Key Design Elements
 - Think - "Green Sheets"
- "Back to Basics"

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2 Pronged Approach



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Past, Future





One Foot in the Past and
Our Eyes on the Future...

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No Matter ...

- How Much Things Change
- What Technology Brings
- How We Procure Contracts
- Who Has Responsibility
- What the Workload is
- Who the Contractor is
- What the Public Demands
- What "Wacky" Stuff Raleigh Dreams up...

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We Can't Lose Sight That

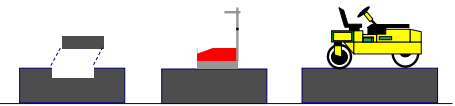
- Construction is Still Construction
- Communication is Still Communication
- Bridges, Pavements, and Drainage Systems Still Have to Be Built Correctly, Perform Appropriately, and Last a Long Time
- Quality Assurance is Critical
- Quality Control is Critical
- Laying a Pipe Is Still Laying a Pipe...

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There May be a Change of Who or How...



Core Samples Nuclear Gauge Intelligent Compaction

However, Density is Still Density, it is Still Critical, and We Must Understand it, Assure it, and Hold Contractors Accountable.

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The Basic Concepts of the Past...

- Training
- Experience
- Communication
- Knowledge
- Teamwork

Must Be the Basis For Our Future...Doing Things a New Way Does not Mean We Forget Where We Came From.

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Back to Basics


Communication



- Preconstruction
- Team Approach
- Documentation of Critical Elements
- Pass on Expertise
- Don't Assume - Ask!

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Back to Basics

Documentation

- Project Diaries
- Construction Meeting Minutes
- Direction to the Contractor
- Supplemental Agreements
- Construction Changes

Construction Manual

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Back to Basics

Training

"Accelerate" the Learning Curve

- Skill Based Pay
- Competency Based Pay
- Transportation Engineer's Academy
 - Technical
 - Management
- Joint NCDOT/Industry Training

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Qa/Qc

Differing Philosophies?

- "You Cannot Inspect Quality Into a Project"

Or...

- "You Should Expect What You Inspect"

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Quality Assurance

NCDOT

- Engineer Engagement
- Sufficient Staffing for Critical Activities
- The Role of Private Engineering Firms
 - PEF Managerial Staff?
- Step Back From Qc
- Enhance Qa

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Quality Control

There is a Huge Gap in the Qc Process

- Qc Plan?
- Qc Process?
- Certifications
 - Asphalt
 - Concrete
 - Pavement Markings
 - Erosion Control
 - Flagging
 - Other?

Where is that DOT guy to tell me I am doing this right?

- Stopping Work?
- Checking Behind Subs?

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Qc by the Contractor

Quality Management System (QMS)

Implemented - 1993


Is Our Asphalt Better? Yes!

Is The Process Perfect? No!

We Learn, Improve, and Learn Some More...

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Qc by the Contractor

- Contractor Qc Team
- Certifications
- "Project-Wide" QMS
- Independent of Production Manager
- Reporting/Documentation
- "Trust but Verify"
 - Accountability
 - If You Don't, Then...



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Qc by the Contractor

Can We Transition:

Means & Methods


↓

Performance Specifications

↓

Warranties

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Project Delivery Options

- Purchase Orders
- Bridge/Resurfacing Small
- TIP Small-Large
- Bypasses: Knightdale
Clayton Large
Washington
- Toll Roads Large-"Mega"

One "Size" Does Not Fit All...

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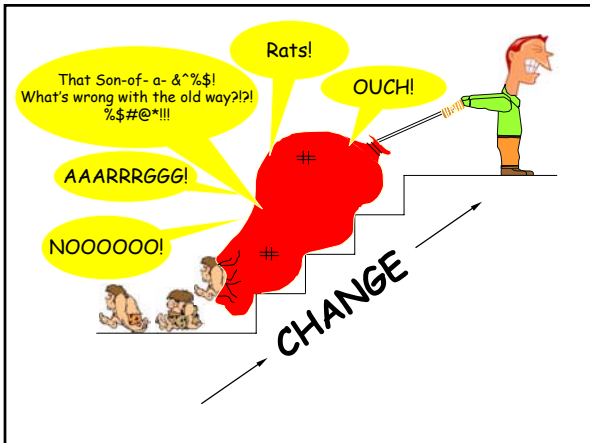
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Let's Focus on 6 Things...

- The New Definition of Project Delivery - "Soup to Nuts"!
- Documentation
- Communication
- Training, Development, & Compensation
- Move From Means & Methods to Performance Specifications & Contractor Accountability
- Qc By The Contractor

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